

N89 - 15878

**Coordinated Videomagnetograph Observations by  
the Big Bear and Huairou Observatories**

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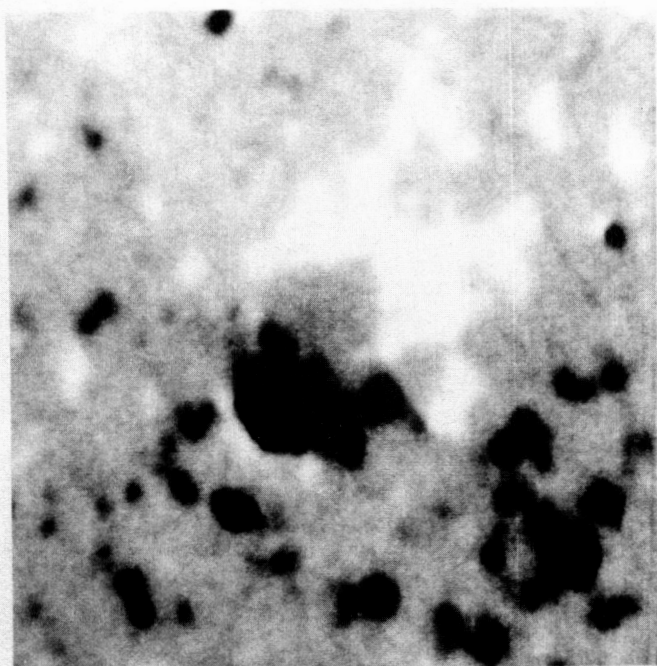
A new videomagnetograph patterned after the BBSO system was installed at Huairou in 1987, and five days of coordinated observing were carried out from Sept 24 to 29, 1987. The data have been combined to make a continuous movie of the fields around a stable spot. A 57-hour magnetograph run with two seven-hour gaps were achieved from 2330 UT, Sept 24 to 0830 UT, Sept 27. The frames have been reregistered and justified to eliminate the change of scale with meridian distance. The intensities were corrected for cosine effect. Preliminary examination of the data shows continuous decrease of the total magnetic field during this period by more than 50%. The principal loss of flux appears to be due to "cancellation" at the main neutral line. Some flux disappears due to fragmentation, which makes the elements fall below our threshold, while only a tiny loss due to diffusion can be detected.

Figs 1 and 2 display 8 frames taken 8 hrs apart. The white rim at the left of

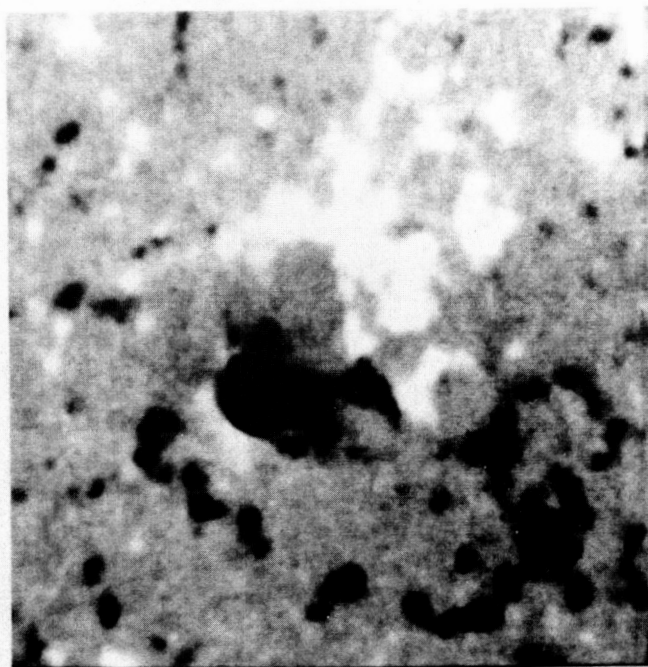
the umbra is a continuous outflow of flux from the spot, which is the same polarity but tilted away from us. These elements collect in dark clumps of vertical fields around the spot. The larger elements of the magnetic network are largely unchanged during the period except for a general decrease of the stronger plages. The network cells last much longer than 20 hours. There is continual merging and small-scale motion, and we find several centers toward which flow is directed. The longest lasting elements appear to be those toward which flow is directed. Intranetwork elements often show sharp changes in trajectory during their lifetimes. A VCR tape of the run was shown at the meeting.

It is planned to continue this program during Max91, including transverse field measurements as well. Several long runs have already been obtained in 1988.

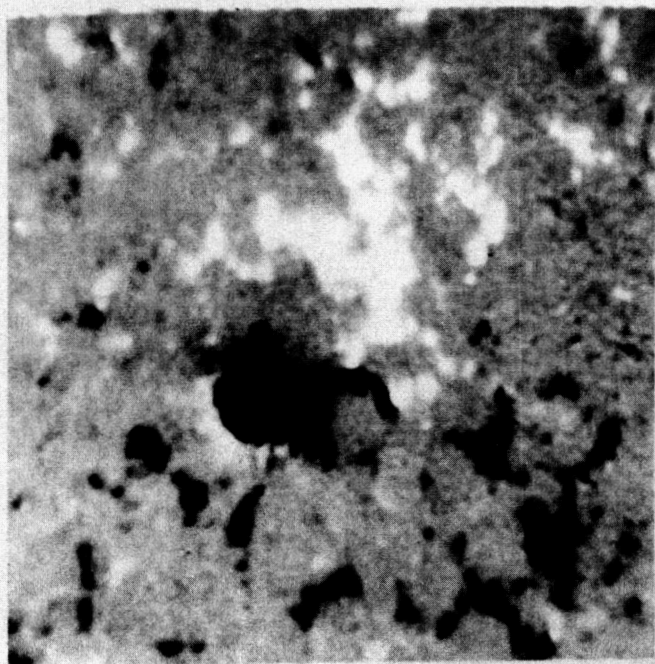
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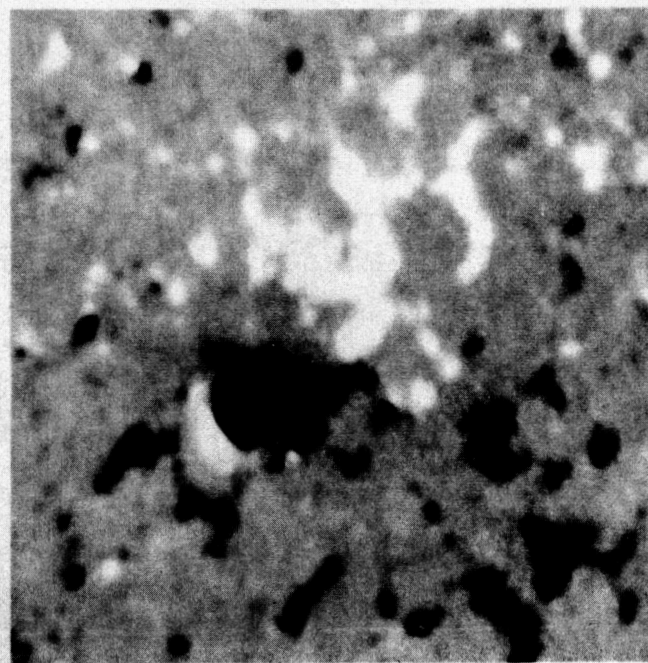
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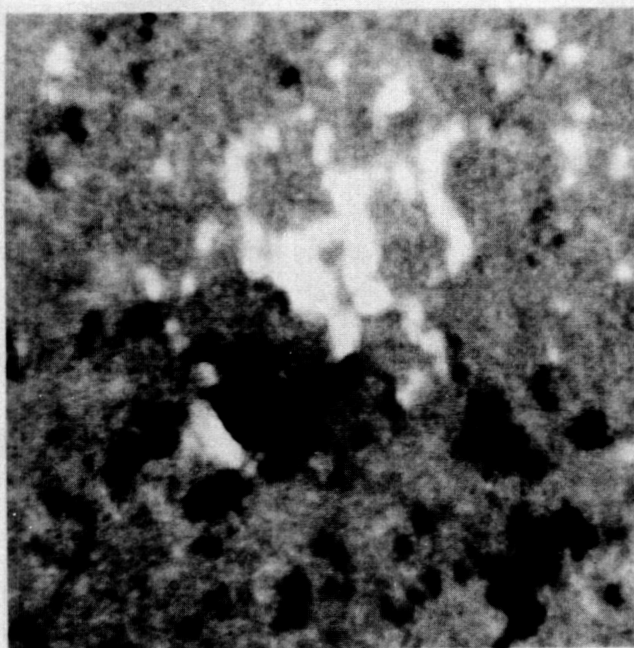
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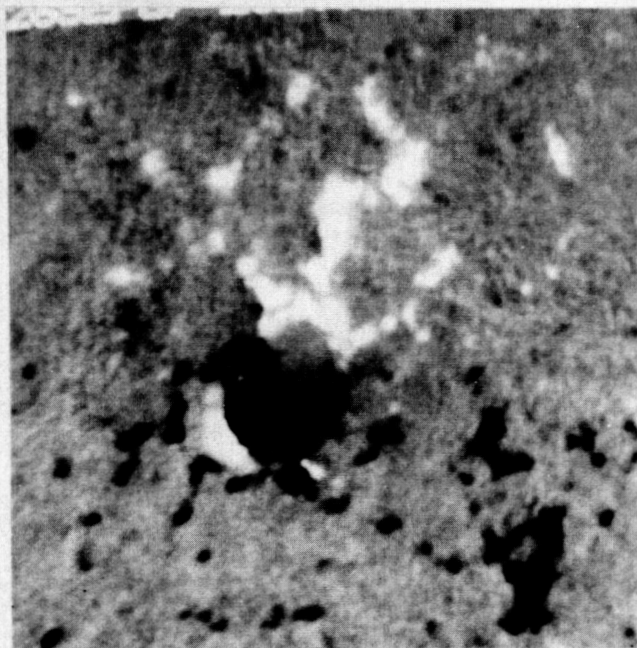
FIGURE 1



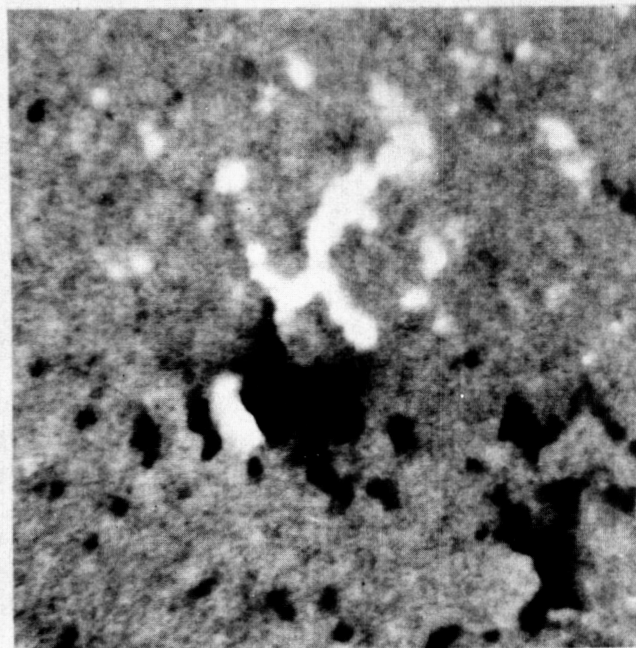
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FIGURE 2

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